This listing of claims will replace all prior versions, and listings, of claims in the application.

II.   Listing of Claims

Claims 1-23 (Canceled)

Claim 24 (Currently Amended):   A method of operating an analytical server which is positioned between a client and a Relational Database Management System (RDBMS), the method operable to provide an interface between the client and a relational database located on the RDBMS, the relational database having fact tables, dimension tables, and metadata describing the relationships between the fact and dimension tables, the method comprising:

> receiving in the analytical server, from the RDBMS, at least a portion of the metadata information regarding the relational database and its organization, including information about a logical hierarchy of the fact and dimension tables;
>
> receiving in the analytical server, from the client, a metric query;
>
> determining, based on the received information regarding the logical hierarchy of the fact and dimension tables and based on the metric query received from the client, which hierarchical levels of the fact and dimension tables are available in the relational database for responding to the metric query;
>
> determining at least one database query according to the available hierarchical levels of the fact and dimension tables; [[and]]
>
> sending the determined at least one database query to the RDBMS, wherein the at least one database query comprises multiple fact table queries, the multiple fact table queries each yielding results;
>
> calculating metric values by assessing which hierarchical levels are available in the results, lining up the results along the available hierarchical levels and performing an outer join; and
>
> whereby the metric query can be responded to by the analytical server based on responses of the RDBMS to the determined at least one database query.

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Claim 25 (Previously Presented):   The method of claim 24 wherein a star schema is defined in the relational database, wherein the star schema comprises a single fact table and zero or more dimension tables which can be joined to the fact table according to selection constraints and aggregate groupings specified in the metadata.

Claim 26 (Previously Presented):   The method of claim 25 wherein the metadata includes a table which stores a supported level for each dimension used in the defined star schema.

Claim 27 (Previously Presented):   The method of claim 24 wherein the fact and dimension tables of the relational database includes a time dimension table.

Claim 28 (Previously Presented):   The method of claim 27 wherein the time dimension table supports first- and second-level dimensions.

Claim 29 (Previously Presented):   The method of claim 28, wherein the first-level dimension table designates "years" and wherein the second-level dimension table designates "months."

Claim 30 (Previously Presented):   The method of claim 27, wherein the fact and dimension tables of the relational database includes at least two time dimension tables, wherein one time dimension table supports a first certain hierarchical level and wherein a second time dimension table supports a second certain hierarchical level.

Claim 31 (Previously Presented):   The method of claim 24, wherein the metadata further comprises security hierarchy levels assigned to certain measures within the relational database and wherein the at least a portion of the metadata received in the analytical server, from the RDBMS, includes information about the security hierarchy levels, the method further comprising:

determining, based in part on the received information regarding the security hierarchy
levels of the fact and dimension tables and based on the metric query received

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from the client, which measures of the fact and dimension tables are available in the relational database for responding to the metric query.

Claim 32 (Previously Presented):   The method of claim 24, and further comprising:
collecting usage statistics based upon the required and availability and use of the fact and
     dimension tables within the database; and
reporting the usage statistics, the reporting of the usage statistics based at least in part on
     the hierarchical level of the fact and dimension tables accessed.

Claim 33 (Previously Presented):   The method of claim 24, and further comprising:
receiving a plurality of metric queries from the client, the plurality of metric queries
     requesting at least two metrics which are broken down at the same hierarchical
     level; and
sending at least one database query to the RDBMS which retrieves measures from the
     RDBMS which are usable in common between the at least two metrics.

Claim 34 (Previously Presented):   A method of executing a metric query for a
relational database, the relational database having fact tables, dimension tables, and metadata
describing the relationships between the fact and dimension tables, wherein the fact tables
include measures which can be additive or non-additive, and wherein the metadata includes a
designation specifying by dimension which measures are additive and which measures are non-
additive, the method comprising:
     receiving the metric query from a client;
     determining which hierarchical levels of the fact and dimension tables are available in the
          relational database for responding to the metric query;
     determining at least one database query according to the available hierarchical levels of
          the fact and dimension tables;
     retrieving data corresponding to the at least one database query from the relational
          database; and

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responding to the metric query based on the data retrieved, whereby the response is

tailored to the most efficient hierarchical level necessary depending on whether

the measures of the requested metric are additive.

Claim 35 (Previously Presented):   A method according to claim 34, wherein the metric query calls for a metric broken down across a requested dimension and also calls for a roll-up of that metric.

Claim 36 (Previously Presented):   A method according to claim 34, wherein
the metric query is received by an analytical server which is positioned between the client

and a Relational Database Management System (RDBMS);
the relational database is located on the RDBMS; and
the method is operable on the analytic server to provide an interface between the client

and the relational database.

Claim 37 (Previously Presented):   A method according to claim 36, wherein the analytical server receives from the RDBMS at least a portion of the metadata information including information about whether certain measures are additive and information about the logical hierarchy of the fact and dimension tables.

Claim 38 (Previously Presented):   A method according to claim 37, wherein the available hierarchical levels of the fact and dimension tables are determined based on the metric query received from the client and based on the received metadata information from the RDBMS regarding the logical hierarchy of the fact and dimension tables and whether the measures of the requested metric are additive.

Claim 39 (Previously Presented):   A method according to claim 35, wherein the determining of the at least one database query takes into account whether the requested metric is additive specifically across the requested dimension.

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Claim 40 (Previously Presented):   A method of executing a metric query for a relational database, the relational database having fact tables, dimension tables, and metadata describing the relationships between the fact and dimension tables, the method comprising:

receiving the metric query from a client;

determining which hierarchical levels of the fact and dimension tables are available in the relational database for responding to the metric query, wherein at least one measure within the fact and dimension tables are insufficiently fine in a requested dimension in order to respond to the metric query;

determining at least one metric by which the at least one measure which was unavailable at the requested fineness can be approximated by the using the measure along the requested dimension at a higher hierarchical level than the one needed to directly respond to the metric query; and

sending a database query to the relational database based on the determining of available hierarchical levels of the fact and data tables and upon at least one higher hierarchical level for the needed measure along the dimension which was unavailable at the needed hierarchical level.

Claim 41 (Previously Presented):   A method according to claim 40, wherein the determining of which hierarchical levels of the fact and dimension tables are available in the relational database is based on a logical hierarchy of the fact and dimension tables and based on the metric query received from the client.

Claim 42 (Previously Presented):   A method according to claim 41, wherein the at least one metric by which the at least one measure which was unavailable at the requested fineness is determined according to the available hierarchical levels of the fact and dimension tables.

Claim 43 (Previously Presented):   A method according to claim 40, wherein the metric query is received by an analytical server which is positioned between the client and a Relational Database Management System (RDBMS);

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the relational database is located on the RDBMS; and

the method is operable on the analytic server to provide an interface between the client
and the relational database.

Claim 44 (Previously Presented):   A method according to claim 43, wherein the
analytical server receives, from the RDBMS, information about whether certain measures are
additive and information about the logical hierarchy of the fact and dimension tables.

Claim 45 (Previously Presented):   The method of claim 40, wherein the measure
which was unavailable at the requested fineness was a time measure.

Claim 46 (Previously Presented):   The method of claim 45, wherein a requested
hierarchical level along the time dimension was for a measure broken down by month.

Claim 47 (Previously Presented):   The method of claim 46, wherein to approximate
the measure on a monthly basis, a measure broken down by quarter is divided by three and
assigned to the requested months.

Claim 48 (Previously Presented):   The method of claim 46, wherein to approximate
the measure on a monthly basis, the measure is repeated at the requested months.

Claim 49 (Previously Presented):   The method of claim 48, wherein the measure was
an average.

Claim 50 (New):   A method of operating an analytical server which is positioned
between a client and a Relational Database Management System (RDBMS), the method operable
to provide an interface between the client and a relational database located on the RDBMS, the
relational database having fact tables, dimension tables, and metadata describing the
relationships between the fact and dimension tables, the method comprising:

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receiving in the analytical server, from the RDBMS, at least a portion of the metadata

information regarding the relational database and its organization, including

information about a logical hierarchy of the fact and dimension tables;

receiving in the analytical server, from the client, a metric query;

determining, based on the received information regarding the logical hierarchy of the fact

and dimension tables and based on the metric query received from the client,

which hierarchical levels of the fact and dimension tables are available in the

relational database for responding to the metric query;

determining at least one database query according to the available hierarchical levels of

the fact and dimension tables;

sending the determined at least one database query to the RDBMS whereby the metric

query can be responded to by the analytical server based on responses of the

RDBMS to the determined at least one database query;

receiving a plurality of metric queries from the client, the plurality of metric queries

requesting at least two metrics which are broken down at the same hierarchical

level; and

sending at least one database query to the RDBMS which retrieves measures from the

RDBMS which are usable in common between the at least two metrics.

Claim 51 (New):   The method of claim 50 wherein the fact and dimension tables of
the relational database includes a time dimension table.

Claim 52 (New):   The method of claim 51 wherein the time dimension table supports
first- and second-level dimensions.

Claim 53 (New):   The method of claim 52, wherein the first-level dimension table
designates "years" and wherein the second-level dimension table designates "months."

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Claim 54 (New):   The method of claim 51, wherein the fact and dimension tables of the relational database includes at least two time dimension tables, wherein one time dimension table supports a first certain hierarchical level and wherein a second time dimension table supports a second certain hierarchical level.

Claim 55 (New):   The method of claim 50, wherein the metadata further comprises security hierarchy levels assigned to certain measures within the relational database and wherein the at least a portion of the metadata received in the analytical server, from the RDBMS, includes information about the security hierarchy levels, the method further comprising:

      determining, based in part on the received information regarding the security hierarchy

            levels of the fact and dimension tables and based on the metric query received

            from the client, which measures of the fact and dimension tables are available in

            the relational database for responding to the metric query.

Claim 56 (New):   The method of claim 50, and further comprising:

collecting usage statistics based upon the required and availability and use of the fact and

            dimension tables within the database; and

            reporting the usage statistics, the reporting of the usage statistics based at least in

            part on the hierarchical level of the fact and dimension tables accessed.